

Hypertriglyceridemia:

Definition: combo of very low density lipoprotein and chylomicrons formed in intestines from dietary consumption. Often elevated due to diet, genetic risk factors or metabolic process (including medication, DM and obesity)

- prevalence of hypertriglyceridemia 33.1% in United States: > 150 mg/dL in 33.1%; ≥ 200 mg/dL in 17.9%; ≥ 500 mg/dL in 1.7%; ≥ 1,000 mg/dL in 0.4%
- **Causes:**
 - Medication: atypical antipsychotics, beta blockers, estrogen (higher dose oral contraceptives, not transcutaneous estrogens), immunosuppressive drugs (glucocorticosteroids, cyclosporine), [isotretinoin](#) (Accutane), [protease inhibitors](#), thiazide-type diuretics, [tamoxifen](#)
 - Metabolic causes: insulin resistance (DM, obesity), [hypothyroidism](#), lipodystrophies, [Cushing disease](#)
 - Diet: excessive carbohydrate intake (> 60% of total energy); excessive alcohol intake
 - other causes: [nephrotic syndrome](#), uremia, hepatitis, pregnancy, cigarette smoking

Why We Care: hypertriglyceridemia is associated with increased cardiovascular risk – the higher the level the higher the risk . also hypertriglyceridemia is associated with increased risk of pancreatitis, especially if levels > 1,000 mg/dL.; with triglyceride levels > 2,000 mg/dL (22.6 mmol/L) considered a medical urgency due to high risk of pancreatitis

Treatment:

- Diet: reduce alcohol consumption, reduce animal fats (including oils, dairy products – including take away food)
- National Cholesterol Education Program (NCEP) recommendations: statin primary treatment for TG< 500
 - triglyceride level > 150 mg/dL, treat LDL to goal
 - triglyceride level > 200 mg/dL, non-high-density lipoprotein (HDL) cholesterol becomes a secondary target of therapy
 - non-HDL cholesterol targets are 30 mg/dL higher than LDL cholesterol targets
 - may require combination of moderate doses of statins plus triglyceride-lowering drugs (fibrate or nicotinic acid)
 - triglyceride level > 500 mg/dL initial aim of therapy is triglyceride lowering to prevent acute pancreatitis
 - discontinue medications that may increase triglycerides; discontinue alcohol
 - for triglycerides > 1,000 mg/dL (> 11.3 mmol/L)
 - fish oils (to replace some long-chain triglycerides in diet)
 - fibrate or nicotinic acid are most effective triglyceride-lowering drugs

Hypertriglyceridemia:

- Endocrine Society recommendations: statin primary treatment for TG < 1000
 - mild-to-moderate hypertriglyceridemia (150-999 mg/dL), initial treatment is lifestyle therapy (diet, exercise, weight loss); consider statins, when indicated, to modify cardiovascular risk with goal of treatment non-LDL per NCEP guidelines (
 - severe and very severe hypertriglyceridemia (> 1,000 mg/dL)
 - combine reduction of dietary fat and carbohydrate intake with drug treatment to reduce risk of pancreatitis
 - drug choices: 1) fibrates 2) niacin 3) omega 3 fatty acids +/- statin
- Review of meds:
 - statin: lower LDL, some tg effect (20-40% reduction)
 - fibrates: lower tg, some increase in HDL, some decrease LDL (20-50% reduction in TG)
 - niacin: increase HDL, some decrease in TG, small reduction in LDL (flushing and hepatotoxicity) (20-40% reduction in TG)
 - fish oil: increase HDL, decrease TG – need 2-4g of DHA/EPA (OTC prep with 300mg daily) (30% reduction in TG)
 - combo: fenofibrate/statin therapy fewer side effects than gemfibrozil/statin combo therapy

Sources: Dynamed Hypertriglyceridemia; UTD hypertriglyceridemia; [Arch Intern Med 2009 Mar 23;169\(6\):572](#); American College of Cardiology/American Heart Association (ACC/AHA) 2013 guideline on treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults can be found in [Circulation 2013 Nov 12 early online](#).